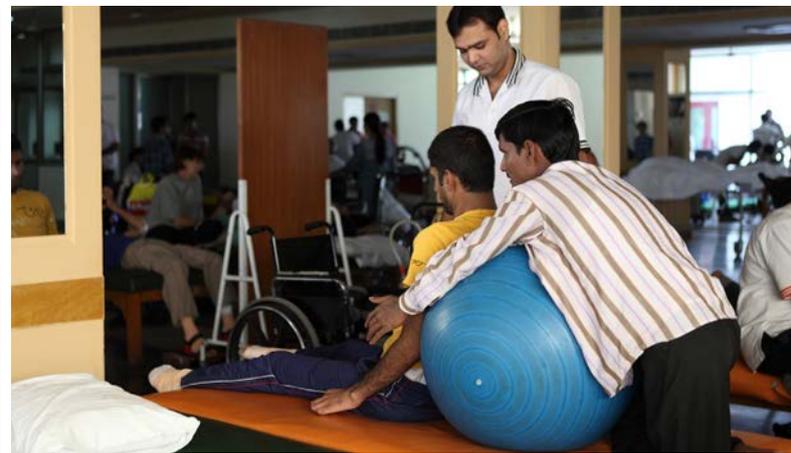
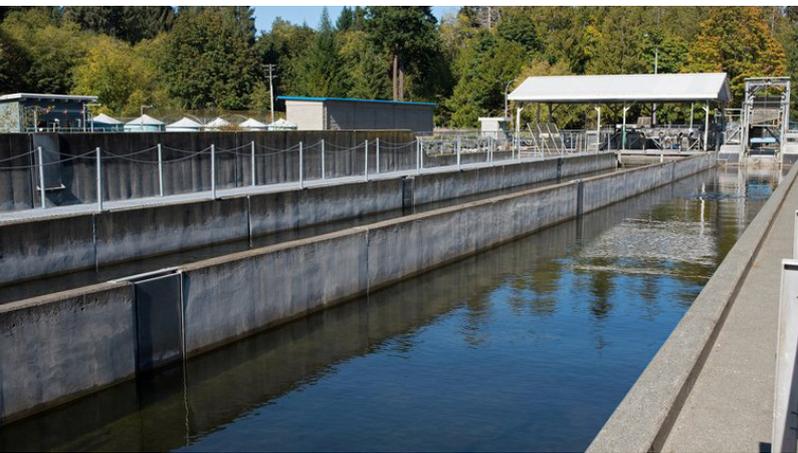
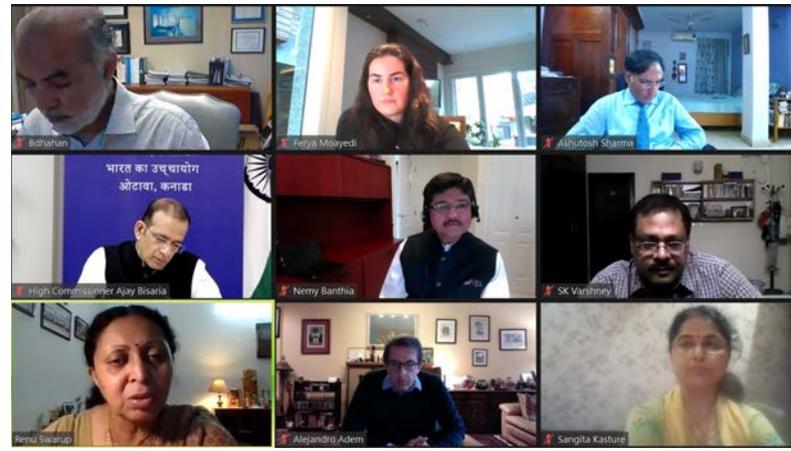
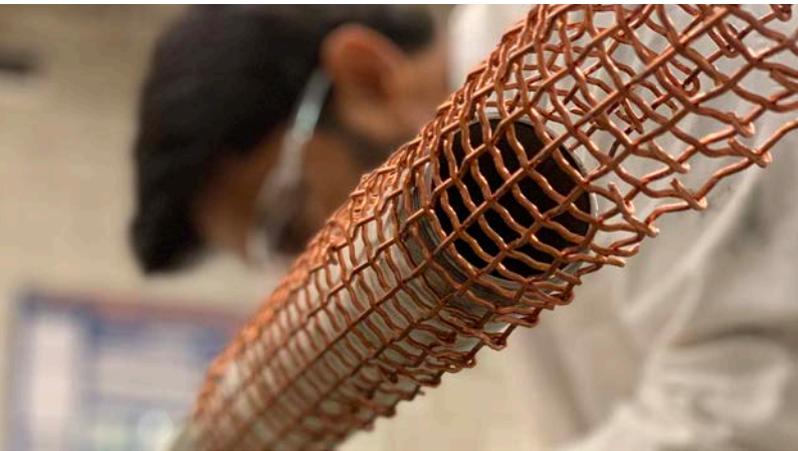




Canada-India Research Centre of Excellence 2019-2020 Annual Report



IMPACT REPORT

Established in 2013, IC-IMPACTS is the only Canada-India Research Centre of Excellence supported by both Canadian and Indian government funding agencies for bilateral research and technology commercialization.

COVID-19, climate change, and depleting natural resources all pose a significant threat to prosperity in Canada and India. The Canadian economy has been driven into a severe recession, disproportionately affecting vulnerable populations and Indigenous communities. Canada's immigration intake, the most important source of Canada's population and labour force growth, has been severely disrupted.

In the face of uncertainty, IC-IMPACTS' advanced technology deployments are creating novel solutions for communities to withstand future challenges.

To learn more about IC-IMPACTS and our projects, please click below to see a message from Dr. Nemy Banthia, IC-IMPACTS CEO and Scientific Director.



IC-IMPACTS PRIORITY AREAS IN CANADA AND INDIA





We acknowledge that IC-IMPACTS' head office is located at the University of British Columbia, Vancouver campus situated on the traditional, ancestral, and unceded territory of the x^wmə0–k^wəy[̓]əm (Musqueam) people.

CONTENTS

| | |
|--|----|
| Year in Review | 5 |
| Technology Acceleration and Commercialization | 7 |
| Taking Research from the Lab into Communities | 9 |
| Infrastructure | 9 |
| Water | 11 |
| Health | 12 |
| Building Global Partnerships to Combat Global Challenges | 13 |
| Highly Qualified Personnel | 15 |
| Commitment to Equity, Diversity, and Inclusion | 17 |
| Looking Forward | 18 |

ANNEXURES

| | |
|-----------------------------|----|
| List of IC-IMPACTS Projects | 19 |
| Members and Committees | 25 |
| Partnerships | 27 |

YEAR IN REVIEW

MESSAGE FROM THE CHAIR

On behalf of the Board of Directors, I am pleased to report on IC-IMPACTS' achievements during the 2019–20 fiscal year. We continue working to improve and expand our collaborative initiatives with Indigenous communities in Canada. Two new projects have been selected for funding under our Call for Proposals: *"Innovation in Design and Construction of First Nations Housing"*, dedicated to creating low-cost, resilient, energy-efficient, and safe housing for Indigenous communities. IC-IMPACTS also accomplished a significant milestone this year by deploying a high-tech pavement in the Chawathil First Nation Community.

Our close relationship with the Department of Science and Technology (DST) and Department of Biotechnology (DBT), Government of India continues to grow. In the past year, IC-IMPACTS has funded multiple projects with matching funding from DST and DBT under two Calls for Proposals. *"Creating Wealth from Waste,"* launched jointly with DBT, solicited proposals for commercially viable methods to extract valuable resources from waste. With DST we launched *"Cyber-Physical Systems to Support Green Buildings in Smart Cities,"* to improve environmental and economic efficiency in urban areas, and leading to positive improvements in human health.

Student training is a key aspect of IC-IMPACTS' model, and we have trained an additional 113 Highly Qualified Personnel in the last year. By creating hands-on training and internship opportunities for students, IC-IMPACTS is continuing in our dedication to preparing a new generation of globally-minded researchers.

Despite facing COVID-19 challenges starting in early 2020, we are proud to have made tremendous progress on each of the goals identified in our 2018-19 Annual Report. Goals for the 2020 - 2021 fiscal year include intensifying our efforts in themes of agri-tech and alternative energy, launching new Calls for Proposals focused on the commercialization of our technologies, and continuing to strengthen our engagement with Canada's Indigenous communities.

I am thankful to our Board of Directors and our Research Management Committee, our executive and office team, partners, researchers, students, and communities across Canada and India for their dedication and commitment to IC-IMPACTS' mission. We look forward to the coming year for further advances in our collaborative approach to finding innovative solutions for community transformation and sustainability.



MR. BARJ S. DAHAN

Chair of the Board of Directors, IC-IMPACTS

MESSAGE FROM THE CEO & SCIENTIFIC DIRECTOR

IC-IMPACTS has remained dedicated since inception to our mission of developing innovative solutions for communities in Canada and India in the areas of public health, safe and sustainable infrastructure, and integrated water management. With a renewed focus on community resiliency, IC-IMPACTS is expanding our mandate to include additional themes of agri-tech and alternative energy to better respond to the needs of target populations.

Despite difficulties faced in the past year, IC-IMPACTS has opened 11 new research projects in high-priority areas of extracting wealth from waste, green buildings and smart cities, and innovative, safe First Nations housing. Working with communities in Canada and India, IC-IMPACTS is focusing on projects that produce deployable solutions to prevalent problems — and creating highly-skilled workforces in the process by providing training and employment opportunities for residents.

2019-20 has seen an expansion in our community projects and joint research with academic and industrial partners in Canada and India. IC-IMPACTS continues its mission of commercializing joint discoveries with India to create and cultivate greater bilateral trade. The relative calm of 2019-20 also allowed us to think beyond the current mandate, and start the dialogue with various stakeholders that have expressed a keen interest in its continuation. This includes our Canadian First Nations partners.

It is rewarding to see all that we have accomplished in a year despite unprecedented global challenges. It is an honour to serve as Chief Executive Officer and Scientific Director of IC-IMPACTS. I sincerely thank the members of our Board of Directors, students, researchers, partners, and staff for their dedication and achievements.



DR. NEMY BANTHIA

Chief Executive Officer & Scientific Director, IC-IMPACTS
Professor of Engineering, the University of British Columbia

IC-IMPACTS' CANADA-INDIA TECHNOLOGY ACCELERATION MODEL — RESEARCH, DEPLOYMENT, TRAINING, AND COMMERCIALIZATION CYCLE



TAKING RESEARCH FROM THE LAB INTO COMMUNITIES

IC-IMPACTS builds innovative solutions to global problems by rapidly transferring research from labs to market.

INFRASTRUCTURE CHALLENGES

- India alone is in need of over 3 million kilometers of paved road.
- Cement production is the third-largest source worldwide of anthropogenic emissions of carbon dioxide; Canada is the 11th highest and one of the largest developed world per capita emitter of Greenhouse Gases.
- Approximately 1 in 5 Indigenous people in Canada live somewhere in need of major repairs due to mould, overcrowding, and improper ventilation, leading to serious health problems.
- First Nations people are 10 times more likely to die in house fires than Canadians overall.

IC-IMPACTS' RESPONSE

- Contribute to the construction industry reducing its carbon footprint by 50% over ten years.
- Create safe, sustainable, low cost housing for Indigenous communities.
- Deploy 3D printed single-story, single family homes that are affordable, durable, healthy, and energy neutral.
- Develop fire resistant homes with novel building materials and early-warning sensors that ensure occupant survivability.



Construction at the deployment site

ECO-FRIENDLY, LOW-COST, SELF-HEALING ROADS IN CHAWATHIL FIRST NATION, HOPE, BC

This novel fibre-reinforced concrete, developed by IC-IMPACTS CEO & Scientific Director Dr. Nemy Banthia (The University of British Columbia) and his research team, utilizes scrap tire fibres, cellulose fibres, and other recycled materials, giving it the ability to “self-heal” when cracks begin to form. This technology has been successfully demonstrated in the Chawathil First Nation community, a pilot project demonstrating the resiliency of this material.

IC-IMPACTS' advanced self-repairing pavement technology has been demonstrated to reduce construction costs, minimize environmental impact, and extend the longevity of deployments while diverting tires from the landfill.

This made-in-Canada technology is a key part of India's plan to build three million kilometres of paved rural roads, beginning with two 10 kilometre test stretches.

WILDFIRE-RESISTANT HOUSING FOR INDIGENOUS COMMUNITIES

Indigenous communities in Interior British Columbia are suffering at the intersection of two crises: housing and climate change. Wildfires increase in size and intensity every year, exacerbating existing indoor air quality issues.

In response to severe health problems associated with indoor air quality in Indigenous on-reserve housing, particularly during Wildfire seasons, a *Wildfire House prototype* will set a new standard of house construction for remote Indigenous communities. This project has been developed in collaboration with the Yunesit'in Community in British Columbia.



Wildfire smoke near a campground

WATER CHALLENGES

- 785 million people worldwide do not have access to clean drinking water, including 88 million people in India.
- At any given time there are more than 100 drinking water advisories in First Nations communities across Canada.
- Climate change and improper wastewater management leading to dangerous contamination of community water supply.

IC-IMPACTS' RESPONSE

- Develop and deploy innovative, affordable, and local cleantech by working and co-developing solutions with Indigenous communities.
- IC-IMPACTS' technologies are creating environmentally-friendly methods of extracting valuable resources from wastewater.

A NATURE-BASED SOLUTION TO ENVIRONMENTAL CONTAMINATION

IC-IMPACTS researchers Dr. Damase Khasa (Université Laval) and Dr. Manzoor Shah (The University of Kashmir) are developing a *hydrophytoremediation* technique that will be a cost-effective, natural technology to remove heavy metals from aquatic ecosystems — starting with two lakes in Canada and India.

Traditional methods of addressing heavy metal contamination cost more than three times per cubic yard, making phytoremediation a greener, more cost-effective choice.



Typha latifolia plants in the laboratory

CITIZEN-LED RESPONSE TO COVID-19 IN LOW-INCOME, LOW-LITERACY AREAS

Mobile Vaani (MV) is a federated network of voice-based community media platforms in India. This project, led by Dr. Mira Johri (Université de Montréal) and Dr. Aaditeshwar Seth (Indian Institute of Technology, Delhi) has deployed MV technology and volunteer networks, supporting communities and governments in India in responding to the COVID-19 emergency.

The participative, voice-based nature of the platform is ideal for reaching large numbers of people with less technology or literacy skills.



A woman in rural India getting COVID-19 information over the phone

HEALTH CHALLENGES

- The unprecedented COVID-19 pandemic.
- Lack of sufficient healthcare in rural and remote communities.
- Social stigma and lack of education surrounding HIV and STI testing in rural and remote communities.
- Household food insecurity linked to income and geography.
- 250,000 – 500,000 people worldwide suffer spinal cord injuries each year; people with a spinal cord injury are 2 – 5 times more likely to die prematurely than people without.
- Health problems arising from waterborne diseases are responsible for approximately 829,000 annual deaths and 1.9% of the global burden of disease.

IC-IMPACTS' RESPONSE

- Educate vulnerable populations about their health and empower them to seek treatment
- Develop and commercialize innovative healthcare technologies to improve the lives of people worldwide
- Boost food sovereignty for remote communities through developing smart and self-reliant greenhouse designs.

BUILDING GLOBAL PARTNERSHIPS TO COMBAT GLOBAL CHALLENGES

IC-IMPACTS is expanding its network by creating new partnerships with industry leaders, universities, Indian Institutes of Technology, government agencies, and community organizations with a renewed focus on commercialization and technology deployment.



“As a research university that values inclusion, collaboration, and innovation, UBC is proud to be a host and partner to IC-IMPACTS, the first and only Canada-India research centre of excellence. IC-IMPACTS and UBC share a core goal of advancing sustainable societies across Canada and the world; IC-IMPACTS is doing that through its 72 bilateral research projects, 352 multi-national corporate partners, 274 researchers, almost 1150 publications, and over 1000 highly qualified personnel trained, who have gained first hand experience transforming ideas into deployments in communities around the world.”

— DR. SANTA ONO,
President and Vice-Chancellor,
The University of British Columbia

IC-IMPACTS Industry-University model spanning across Canada and India allows students and faculty to work with industry leaders, international universities, and creates student internship and training opportunities.

To date, our Canada-India partnerships have trained 1,059 highly-qualified Canadian and Indian students including 138 Postdoctoral, 414 PhD, 258 Masters, 116 Undergraduate, and 133 others.

352

PARTNERSHIPS

114 UNIVERSITY
144 INDUSTRY
37 GOVERNMENT
57 COMMUNITY



Indian Spinal Injuries Centre,
New Delhi, India

“Quality of life of individuals with Spinal Cord Injury (SCI) is lower than that of their non-disabled peers. Our collaboration since 2018 with IC-IMPACTS, a unique Canada-India model, has facilitated the development of technologies that have strong commercialization potential and will improve the quality of life for individuals with SCI in Canada and India. Multiple effective technologies are emerging from our collaborations and moving towards the market, where they will make a real difference to patients and establish better inclusion of people with spinal cord injury into the community.”

— DR. H.S. CHHABRA,
Medical Director & Chief of Spine Services, Indian Spinal Injuries Centre
and President, International Spinal Cord Society

HIGHLY QUALIFIED PERSONNEL: TRAINING THE NEXT GENERATION TO FACE THE FUTURE

IC-IMPACTS' highly skilled HQP are gaining first-hand perspectives of international community challenges and becoming tomorrow's global researchers in areas of water, health, and infrastructure.

In response to COVID-19, the IC-IMPACTS Student Engagement Committee (SEC) organized multiple weekly online webinars attended by scholars from Canada and around the world, including the USA, UK, India, and China, on advanced topics of Water and Infrastructure.



A presentation by the SEC, held online over Zoom during COVID-19



Researchers and HQP working in the field on Dr. Fae Azhari's project in Manitoba, Canada

1,059
HIGHLY QUALIFIED
PERSONNEL (YEARS)

672
ALUMNI EMPLOYED
IN ACADEMIA,
GOVERNMENT,
HOSPITALS, & INDUSTRY



Participants at the HQP-Led Workshop on Detecting Electrically Charged Biomolecules (DECBio'2019) at L'Université de Sherbrooke

" Since 2015, the SEC has hosted numerous workshops, conferences, webinars and informal Café-Scientifiques to strengthen the leadership competence of its wide network of students and to address critical issues during unprecedented emergencies."

— FUHAM DIXIT,

SEC Co-Chair & Graduate Seminar Coordinator,
PhD Candidate, The University of British Columbia

IC-IMPACTS' community-based research provides a transformative experience for students, including field testing opportunities on community-driven projects, helping them build skills in applied research and community engagement.

IC-IMPACTS HQP Leadership Awards supports students in achieving their strategic goals by allowing them to design, manage, and lead workshops, conferences, or projects related to their research program. The practical skills taught and relationships built have led to an almost 100% employment rate of alumni HQP in their chosen field.

COMMITMENT TO EQUITY, DIVERSITY, AND INCLUSION

All of IC-IMPACTS projects, initiatives and steering committees have a commitment to equity, diversity, and inclusion built-in as a key responsibility.

As an international research Centre, IC-IMPACTS is acutely aware of the benefits brought to innovation through diversity. We encourage underrepresented groups and eliminate barriers to create an equitable environment of support and respect.



Dr. Banthia's research group at the University of British Columbia



Attendees at the IC-IMPACTS SEC-Hosted Commercialization of Technologies in India and Canada Workshop, December 2019 in Ahmedabad, India



Councillor Monica Florence of Chawathil First Nation speaking at IC-IMPACTS Annual Vancouver Research Conference, June 2019



Dr. Banthia at a groundbreaking ceremony for Chawathil First Nation Deployment Project

LOOKING FORWARD

IN THE COMING YEARS, IC-IMPACTS WILL

- ▶ Facilitate Canada-India collaborations focused entirely on technology deployment and commercialization;
- ▶ Intensify our efforts in the areas of agri-tech and clean energy with a renewed focus on resilient communities;
- ▶ Strengthen our engagement with Canada's Indigenous communities to demonstrate advanced technologies in wastewater treatment, greenhouse construction, fishery infrastructure, and 3D printed homes;
- ▶ Continue to support HQP in entrepreneurship and leadership; and
- ▶ Continue to prioritize equity, diversity, and inclusion throughout all aspects of our work.



IC-IMPACTS PROJECTS: SAFE AND SUSTAINABLE INFRASTRUCTURE

IC-IMPACTS is working to solve common infrastructure problems in Canada and India to create safer and more sustainable communities.

ACTIVE PROJECTS

Assessment of Fire Performance of Structural Elements and Structural Systems Through Conventional Fire Tests and Hybrid Fire Simulation
Canadian Lead: Dr. Oh-Sung Kwon, The University of Toronto
Indian Lead: Dr. Dipti Ranjan Sahoo, Indian Institute of Technology, Delhi

Carbon Neutrality Through Combined CO2 Capture And Novel H2 Technology With Production Of Non-Conventional Fuels For Smart Cities
Canadian Lead: Dr. Ibrahim Dincer, Ontario Tech University
Indian Lead: Dr. Subrata Borgohain Gogoi, Dibrugarh University Assam

Development Of Cost-Effective, Energy-Efficient, And Resilient Housing Technologies For First Nations Communities
Canadian Lead: Dr. Ashutosh Bagchi, Concordia University

Fire Performance of Aged Reinforced Concrete Structures
Canadian Lead: Dr. Mark F. Green, Queen's University
Indian Lead: Dr. Umesh Kumar Sharma, Indian Institute of Technology, Roorkee

Harnessing the Potential of Renewable Energy (Solar / Wind) for Sustainable Building Energy Management through Compressed Air Energy Storage
Canadian Lead: Dr. Fariborz Haghighat, Concordia University
Indian Lead: Dr. V Gayathri, Vellore Institute of Technology

High Fracture Toughness, Durable Concrete with Minimized Carbon Footprint Employing Large Amounts of Industrial Waste
Canadian Lead: Dr. Nemkumar Banthia, The University of British Columbia

Improving Building Energy Demand Predictions In Smart Cities Through Sensor Observations And Considerations Of Landscape Characteristics
Canadian Lead: Dr. Fitsum Tariku, British Columbia Institute of Technology
Indian Lead: Dr. Prasad Avinash Pathak, FLAME University

Improving Fire Safety of Structures Through the Development of Fire Retardant Laminated Glass Glazing
Canadian Lead: Dr. Maged Youssef, Western University
Indian Lead: Dr. Ajitanshu Vedralnam, Invertis University

Large Area Microbolometer Uncooled Focal Plane Arrays for Thermal Imaging
Canadian Lead: Dr. Ghassan Jabbour, The University of Ottawa
Indian Lead: Dr. Madhusudan Singh, Indian Institute of Technology, Delhi

Metamaterial Walls for Improved Acoustic Performance in Green Building
Canadian Lead: Dr. Umberto Berardi, Ryerson University
Indian Lead: Dr. Arpan Gupta, Indian Institute of Technology, Mandi

Metawall: Metamaterial Based Lightweight Panel Wall For Enhanced Building Acoustic And Seismic Resistance
Canadian Lead: Dr. Sreekanta Das, The University of Windsor
Indian lead: Dr. Arnab Banerjee, Indian Institute of Technology, Delhi

Mobile App for Improving Survival in Fires Through Efficient Egress: The Role of Impromptu Indoor WiFi Localization and Georeferenced Building Maps
Canadian Lead: Dr. Raja Sengupta, McGill University
Indian Lead: Dr. Ashwin Srinivasan, BITS Pilani KK Birla Goa Campus

Scour Monitoring of an Overwater Bridge in Manitoba Using Dissolved Oxygen (DO) probes
Canadian Lead: Dr. Faezeh Azhari, The University of Toronto

Wildfire House
Canadian Lead: John Bass, The University of British Columbia

COMPLETED PROJECTS

Application Of Precast Products Made Using Bottom Ash And Fly Ash For Rural Pavements And Other Infrastructure In India
Canadian Lead: Dr. Rishi Gupta, The University of Victoria
Indian Lead: Dr. Urmil Dave, Institute of Technology, Nirma University

Characterization And Use Of Industrial Fly Ash
Canadian Lead: Dr. Daman Panesar, The University of Toronto
Indian Lead: Dr. Bhupinder Singh, Indian Institute of Technology, Roorkee

Conservation Of Heritage Masonry Structures Within Cauvery Basin Waterworks
Canadian Lead: Dr. Vivek Bindiganavile, The University of Alberta
Indian Lead: Dr. Narayana Suresh, National Institute of Engineering

Energy and Water Disaggregation for Non-Intrusive Load Monitoring in Buildings
Canadian Lead: Dr. Ivan Bajic, Simon Fraser University
Indian Lead: Dr. Angshul Majumdar, Indraprastha Institute of Information Technology - Delhi

Evaluating The Integrity Of Railways Infrastructure In India And Canada With An Emphasis On Bridges And Tracks
Canadian Lead: Dr. Mustafa Gul, The University of Alberta
Indian Lead: Dr. Banerji, Indian Institute of Technology, Roorkee

Full Field Non-Contact SHM Protocols For Long Span Railway Bridges And Heritage Structures
Canadian Lead: Dr. Rishi Gupta, The University of Victoria
Indian Lead: Dr. Balasubramanian Esakki, Vel Tech University

India-Canada Initiative for Resilient Global Urban Shelter
Canadian Lead: Dr. Constantin Christopoulos, The University of Toronto
Indian Lead: Dr. Ravi Sinha, Indian Institute of Technology, Bombay

Innovative Field Demonstration of Sustainable Infrastructure
Canadian Lead: Dr. Shamim Sheikh, The University of Toronto
Indian Lead: Dr. Umesh Kumar Sharma, Indian Institute of Technology, Roorkee

Modelling And Assessment Of Deficient And Repaired Structures
Canadian Lead: Dr. Frank Vecchio, The University of Toronto
Indian Lead: Dr. Umesh Kumar Sharma, Indian Institute of Technology, Roorkee

Smart Sensor Deployment in Buildings: Evacuation Planning and Energy Management
Canadian Lead: Dr. Mark S. Fox, The University of Toronto
Indian Lead: Dr. Krithi Ramamritham, Indian Institute of Technology, Bombay

Solar Energy Powered Net-Zero Energy Smart Buildings
Canadian Lead: Dr. Bruno Lee, Concordia University
Indian Lead: Dr. K. Srinivas Reddy, Indian Institute of Technology, Madras

Structural Health Monitoring Of Tall Buildings Using Vibration-Based Techniques
Canadian Lead: Dr. Lucia Tirca, Concordia University
Indian Lead: Dr. S.K. Panigrahi, CSIR-CBRI, Roorkee

Sustainable Infrastructure Using Smart FRPs
Canadian Lead: Dr. Shamim Sheikh, The University of Toronto
Indian Leads: Dr. Umesh Sharma, & Dr. Pradeep Bhargava, Indian Institute of Technology Roorkee

Urban Heat Island Effect and Building Energy Demand: Linkages Explained Using a Dense, Low Cost Sensor Network
Canadian Lead: Dr. Raja Sengupta, McGill University
Indian Lead: Dr. Prasad A. Pathak, Shiv Nadar University

IC-IMPACTS PROJECTS: INTEGRATED WATER MANAGEMENT



From point-of-use water purification to advanced septic systems, IC-IMPACTS is developing cutting edge, scalable solutions to critical water problems.

ACTIVE PROJECTS

A High Performance Advanced Septic (HPAS) System for Villages and Roadside Restaurants

Canadian Lead: Dr. Edward McBean, The University of Guelph
Indian Lead: Dr. Y. R. Satyajji Rao, National Institute of Hydrology

Biovalorization of Lignin

Canadian Lead: Dr. Vikramaditya G. Yadav, The University of British Columbia
Indian Lead: Dr. Syed S. Yazdani, International Centre for Genetic Engineering and Biotechnology

Development And Scale-Up Of Technology For Microbial Extraction Of Xylose From Agro-Waste Materials And Subsequent

Conversion Into Xylitol.

Canadian Lead: Dr. Tatjana Stevanovic, Université Laval
Indian Lead: Dr. Baljinder Kuar, Punjabi University

Development Of Capacitive Deionization Technology For Point-Of-Use Water Purification

Canadian Lead: Dr. Madjid Mohseni, The University of British Columbia
Indian Lead: Dr. Sathish Kumar, Eureka Forbes Ltd.

Testing and Upscaling Phytoremediation Technology in Real-World Conditions

Canadian Lead: Dr. Damase Khasa, Université Laval
Indian Lead: Dr. Manzoor Shah, The University of Kashmir

COMPLETED PROJECTS

A Floating Treatment Wetland System for Removing Contaminants from Rivers and Streams using a Biomimicry Approach

Canadian Lead: Dr. Shiv Prasher, McGill University
Indian Lead: Dr. Ramesh Kanwar, Lovely Professional University

A Nanotechnology Enabled Device For The Detection Of Harmful Bacteria In Drinking Water

Canadian Lead: Dr. Michael Serpe, The University of Alberta
Indian Lead: Dr. Soumyo Mukherji, Indian Institute of Technology, Bombay

A Study Of Technology And Financial Appropriateness Of Water And Wastewater Infrastructure In Selected Cities Of India

Canadian Lead: Dr. Govind Gopakumar, Concordia University
Indian Lead: Dr. N.C. Narayanan, Indian Institute of Technology, Bombay

An Innovative Green Technology For Treating Municipal And Industrial Wastewater Entering Rivers And Streams

Canadian Lead: Dr. Shiv Prasher, McGill University
Indian Lead: Prof. Rameshwar Kanwar, Lovely Professional University

An Innovative Sustainable Biotechnology Or Resource Recovery From Wastewater Streams Using Microwave Enhanced Advanced Oxidation With Algae

Canadian Lead: Dr. Victor Lo, The University of British Columbia
Indian Lead: Dr. Pradeep Kumar, Indian Institute of Technology, Roorkee

Application of Emerging Biotechnology for Non-point Source Pollution Control of River Ganga, India

Canadian Lead: Dr. Onita Basu, Carleton University
Indian Lead: Dr. Anirban Gupta, IEST Shibpur

Biomonitoring Of Water Quality In Relation To Human Health Using Biosensors And Improvements Through Nanoparticle-Based Purification Systems

Canadian Lead: Dr. Damase P. Khasa, Université Laval
Indian Lead: Dr. Manzoor Shah, The University of Kashmir

Compact High-Rate Water Treatment Systems For Small Communities

Canadian Lead: Dr. Ramin Farnood, The University of Toronto
Indian Lead: Dr. Vivek Kumar, Indian Institute of Technology, Roorkee

Contaminated Land Reclamation Using Hybrid Absorbable Landscape And Native Plant Species

Canadian Lead: Dr. Rishi Gupta, The University of Victoria
Indian Lead: Dr. Neeta Raj Sharma, Lovely Professional University

Development Of A Low-Cost Water Monitoring Kit For Multiplex Heavy Metal Detection Based On Aptamer Sensors

Canadian Lead: Dr. David Juncker, McGill University
Indian Lead: Dr. Rohit Srivastava, Indian Institute of Technology, Bombay

Development Of An ICT Platform For Water Quality Monitoring

Canadian Lead: Dr. Clarence de Silva, The University of British Columbia
Indian Lead: Dr. Sandhya Shrivastava, Bhavan's Research Centre, Mumbai University

Direct Cryptosporidium Detection For Developed And Developing Nations

Canadian Lead: Dr. Mina Hoorfar, The University of British Columbia
Indian Lead: Dr. Krishna Khairnar, CSIR – National Environmental Engineering Research Institute

Handheld P-Laps Pathogen Detector

Canadian Lead: Dr. Thomas Thundat, The University of Alberta
Indian Lead: Dr. Bhaskaran Muralidharan, Indian Institute of Technology, Bombay

High Quality Potable Water For Small/ Remote Communities In Canada And India

Canadian Lead: Dr. Pierre Bérubé, The University of British Columbia
Indian Lead: Dr. Anand Krishnamurthy, GE India

Microfabricated, Low-Cost, High-Sensitivity Chlorine And Ph Sensor Systems For Water Quality Monitoring

Canadian Lead: Dr. Jamal Deen, McMaster University

Passive UF Membrane Demonstration

Canadian Lead: Dr. Pierre Bérubé, The University of British Columbia

Quantum Dot Solar Panels For Water Treatment In Remote Settings

Canadian Lead: Dr. Edward Sargent, The University of Toronto

Sensors 4 People / 3 Drops

Canadian Lead: Dr. Michael Serpe, The University of Alberta

Sewage Contaminated Lake Water Quality Restoration through Aeration and Floating Wetland Plants

Canadian Lead: Dr. Rajesh Seth, The University of Windsor
Indian Lead: Dr. Rakesh Kumar, CSIR-NEERI

Thondebhavi Water Quality Assessment

Canadian Lead: Dr. Pierre Bérubé, The University of British Columbia

Thorsby Water Quality Assessment

Canadian Lead: Dr. Michael J. Serpe, The University of Alberta

IC-IMPACTS PROJECTS: PUBLIC HEALTH

All of IC-IMPACTS' public health research projects are in service to the most vulnerable communities, eliminating barriers that prevent certain groups from receiving proper care or treatment.



ACTIVE PROJECTS

Agent-Based Simulation Of Covid-19: Estimating The Spread And Disease Burden Using Advanced Epidemiological Modelling
Canadian Lead: Dr. Raja Sengupta, McGill University
Indian Lead: Dr. Deepak Saxena, Indian Institute of Public Health, Gandhinaga

Citizen-lead Evaluation of the Public Health Response to COVID-19 in India: Harnessing Information and Communications Technology (ICT) to Promote Real-Time learning, Human Rights and Good Governance
Canadian Lead: Dr. Mira Johri, Université de Montréal
Indian Lead: Dr. Aaditeswar Seth, Indian Institute of Technology, Delhi

COPE: Community Health Outcomes and Personalized Education/Exercises for Spinal Injured Individuals
Canadian Lead: Dr. Andrei Krassioukov, The University of British Columbia
Indian Lead: Dr. Nishu Tyagi, Indian Spinal Injuries Centre

Design2Impact: Uniting Researchers, Makers and Spinal Injury Survivors Through Open-Source Technology
Canadian Leads: Dr. Aaron Yurkewich, The University of Toronto, and Stewart Russell, Makers Making Change at Neil Squire Society

Development of Wearable Artificial Muscle for a Tetraplegic Hand
Indian Leads: Dr. Harvinder Chhabra, Indian Spinal Injuries Centre, India and Dr. Sitikantha Roy, Indian Institute of Technology, Delhi

Dialled In: Tapping Community Voice To Improve Child Immunization Services In India
Canadian Lead: Dr. Mira Johri, Université de Montréal
Indian Lead: Dr. Alok Kumar Mathur, Indian Institute of Health Management Research (IIHMR) University

Development of Portable Spine MEG Scanner for Real-Time Spinal Functional Evaluation and Data Acquisition
Canadian Lead: Dr. Teresa Cheung, Simon Fraser University,
Indian Lead: Dr. Rohit Sharma, Indian Institute of Technology, Ropar

Smart App-Based Rapid Multiplex Screening of HIV Associated Co-Infections of at Risk Populations at the Point-of-Care: A Demonstration Study in India
Canadian Lead: Dr. Nitika Pant Pai, McGill University
Indian Lead: Dr. Suma Nair, Manipal Academy of Higher Education

Wearable Technology to Monitor Sitting Posture and Reduce the Pressure Injury Risk
Canadian Lead: Dr. Hossein Rouhani, The University of Alberta

COMPLETED PROJECTS

A High Quality Serotype Discriminating Dengue Virus Diagnostic Test Adapted For Field Investigation
Canadian Lead: Dr. Sachdev Sidhu, The University of Toronto
Indian Lead: Dr. Amitabha Chaudhuri, SciGenom Labs

A Point-Of-Care Device For Malaria Diagnosis And Drug Resistance Genotyping
Canadian Lead: Dr. Stephanie Yanow, The University of Alberta
Indian Lead: Dr. Aparup Das, National Institute of Malaria Research

A Portable Fever Kit For Dengue And Chikungunya
Canadian Lead: Dr. Stewart Aitchison, The University of Toronto
Indian Lead: Dr. Manoj Varma, Indian Institute of Science

Development Of A Hand Held Molecular Point-Of-Care Test Device For Infectious Diseases
Canadian Lead: Dr. James Mahony, McMaster University
Indian Lead: Professor Daman Saluja, The University of Delhi

Development Of A Portable Device For Early Detection Of Eye Infection And Dry Eye Disease
Canadian Lead: Dr. James Feng, The University of British Columbia
Indian Lead: Dr. Ashutosh Richhariya, L.V. Prasad Eye Institute

Engaging Community Pharmacists In India To Enhance Early Detection Of Tuberculosis
Canadian Lead: Dr. Madhukar Pai, McGill University
Indian Lead: Dr. Nita Jha, World Health Partners

Identification Of High Affinity Ligands Against Dengue Virus NS1 For The Development Of An Affordable Point-Of-Care Diagnostic Kit
Canadian Lead: Dr. Tom Hobman, The University of Alberta
Indian Lead: Dr. Easwaran Sreekumar, Rajiv Gandhi Centre for Biotechnology

Next Generation Molecular Diagnostics For Emerging Viral Diseases
Canadian Lead: Dr. Francois Jean, The University of British Columbia
Indian Lead: Dr. Santanu Chattopadhyay, Nationwide the Family Doctors

Surface Modulation Of CuS Quantum Dots Using Biginelli Compounds For Construction Of A Portable Fluorescence Sensor For Bacteria
Canadian Lead: Dr. Jan J. Dubowski, Université de Sherbrooke
Indian Lead: Dr. Narinder Singh, Indian Institute of Technology, Ropar

MEMBERS AND COMMITTEES

BOARD OF DIRECTORS

Mr. Barj S. Dhahan (Chair)
CEO, Sandhurst Group

Dr. Nemy Banthia (CEO & Scientific Director)
Professor, The University of British Columbia

Dr. Helen Burt
Associate Vice President, Research & Innovation, The University of British Columbia

Dr. Roger Cheng
Professor, Department of Civil & Environmental Engineering, The University of Alberta

Dr. Arvind Gupta
Professor, Computer Science, The University of Toronto

Dr. Sujatha Ramdorai
Professor, Mathematics, The University of British Columbia

Mr. Hari Varshney
Founder & Partner, Varshney Capital Corp.

Dr. Christopher Yip
Dean, Faculty of Applied Science & Engineering, The University of Toronto

Mr. Timir Baran Roy
PhD Candidate, Concordia University

Dr. V.I. Lakshmanan
Vice Chairman and CEO, Process Research Ortech Inc.

Mr. David Isaac
Acting Executive Director, Centre for Native Policy & Research

Ms. Meeru Dhalwala
Author and Entrepreneur

Dr. Philip Edgcumbe
Faculty Member, Medicine, Singularity University Canada and Resident Physician, The University of British Columbia

NCE LIAISON AND OBSERVER ON THE IC-IMPACTS GOVERNING BOARD AND RMC

Dr. Stewart Fast
Senior Program Manager, Networks of Centres of Excellence (NCE)

SCIENTIFIC TEAM

Dr. Nemy Banthia, Scientific Director and Theme Lead, Safe and Sustainable Infrastructure, The University of British Columbia

Dr. Stewart Aitchison, Theme Lead, Public Health: Disease Prevention and Treatment, Professor, Electrical & Computer Engineering, The University of Toronto

Dr. Damase Khasa, Theme Lead, Integrated Water Management, Professor, Department of Wood and Forest Sciences, Université Laval

EXECUTIVE COMMITTEE

Mr. Barj S. Dhahan (Chair)
CEO, Sandhurst Group

Dr. Nemy Banthia
Professor, The University of British Columbia

Dr. Roger Cheng
Professor, The University of Alberta

Dr. Arvind Gupta
Professor, The University of Toronto

Mr. Hari Varshney
Founder & Partner, Varshney Capital Corp.

FINANCE & AUDIT COMMITTEE

Mr. Hari Varshney (Chair)
Founder & Partner, Varshney Capital Corp.

RESEARCH MANAGEMENT COMMITTEE

Dr. Nemy Banthia (Chair)
Professor, The University of British Columbia

Dr. Stewart Aitchison
Professor, The University of Toronto

Dr. Damase Khasa
Professor, Université Laval

Dr. Madjid Mohseni
Professor, The University of British Columbia

Dr. Daman Panesar
Professor, The University of Toronto

Dr. Kevin Kane
Professor, The University of Alberta

Dr. Reed Ellis
Vice President, Bridges, Stantec Inc.

Dr. Ash Parameswaran
Professor, Simon Fraser University

Dr. Stephanie Yanow
Professor, The University of Alberta

Dr. Rishi Gupta
Associate Professor, The University of Victoria

NOMINATIONS & GOVERNANCE COMMITTEE

Dr. Arvind Gupta (Chair)
Professor, The University of Toronto

Dr. Sujatha Ramdorai
Professor, The University of British Columbia

Dr. Christopher Yip
Dean, Faculty of Applied Science & Engineering, The University of Toronto

STUDENT ENGAGEMENT COMMITTEE

Mr. Timir Baran Roy (Chair)
PhD Candidate, Concordia University

Mr. Fuhar Dixit
Co-Chair & Graduate Seminar Coordinator
PhD Candidate, The University of British Columbia

Mr. Mohammed Farooq
Webinar Coordinator
PhD Candidate, The University of British Columbia

Mr. Anurag Krishna
Outreach and Communications Coordinator
PhD Student, The University of British Columbia

Ms. Afreen Anwar
Country Representative – India
Women Scientist B, Indian Institute of Technology, Roorkee

Mr. Shashank Chandra
Event Coordinator – India
PhD Student, Indian Institute of Technology, Roorkee

Ms. Archita Borah
Outreach and Social Media Coordinator
Masters of Applied Science Student, The University of British Columbia

Mr. Abhishek Dutta
Graduate Seminar Coordinator
PhD Student, The University of British Columbia

PARTNERSHIPS

CANADIAN UNIVERSITY PARTNERS

- British Columbia Institute of Technology, Burnaby
- Carleton University, Ottawa
- Concordia University, Montreal
- Interdisciplinary Institute for Technological Innovation (3iT), Sherbrooke
- McGill University, Montreal
- McMaster University, Hamilton
- Nanotechnology Research Centre, Edmonton
- Queen's University, Kingston
- Ryerson University, Toronto
- Simon Fraser University, Burnaby
- Toronto Rehabilitation Institute, Toronto
- Ontario Tech University, Oshawa
- Polytechnique Montreal, Montreal
- United Nations University – Institute for Water, Environment and Health, Hamilton
- Université de Montreal, Montreal
- Université de Sherbrooke, Sherbrooke
- Université Laval, Quebec City
- Universities Canada QEII Diamond Jubilee Scholarship
- University of Alberta, Edmonton
- University of British Columbia, Vancouver
- University of Calgary, Calgary
- University of Guelph, Guelph
- University of Manitoba, Winnipeg
- University of Ottawa, Ottawa
- University of Toronto, Toronto
- University of Victoria, Victoria
- University of Waterloo, Waterloo
- University of Windsor, Windsor
- Université du Québec à Trois-Rivières, Trois-Rivières
- Western University, London
- York University, Toronto

INDIAN UNIVERSITY PARTNERS

- Amrita Vishwa Vidyapeetham, Coimbatore
- Apollo Hospitals, Chennai
- Baba Farid University of Health Sciences, Faridkot
- Bhavan's Research Centre, Mumbai University, Mumbai
- Birla Institute of Technology & Science, Pilani
- Center for Environment & Development, Hyderabad

- Central Electronic Engineering Research Institute, Pilani
- GMR Institute of Technology, Rajam
- Indian Agricultural Research Institute, New Delhi
- Indian Institute of Engineering Science and Technology (IIST), Shibpur
- Indian Institute of Health Management Research (IIHMR) University, Jaipur
- Indian Institute of Science Education & Research (IISER), Pune
- Indian Institute of Science, Bangalore
- Indian Institute of Technology, (BHU) Varanasi
- Indian Institute of Technology, Bombay
- Indian Institute of Technology, Delhi
- Indian Institute of Technology, Hyderabad
- Indian Institute of Technology, Kanpur
- Indian Institute of Technology, Kharagpur
- Indian Institute of Technology, Madras
- Indian Institute of Technology, Mandi
- Indian Institute of Technology, Mumbai
- Indian Institute of Technology, Patna
- Indian Institute of Technology, Roorkee
- Indian Institute of Technology, Ropar
- Indian National Academy of Engineering
- Indian Spinal Injuries Center, New Delhi
- Institute of Chemical Technology, Mumbai
- International Centre for Genetic Engineering and Biotechnology, New Delhi
- Invertis University, Rajau Paraspur
- Jawaharlal Nehru Technological University (JTNU), Kakinada
- Khulna University, Khulna
- Lovely Professional University, Phagwara
- LV Prasad Eye Institute, Hyderabad
- Manipal Academy of Higher Education, Manipal
- National Academy of Construction, Hyderabad
- National Institute for Research in Tuberculosis, Chennai
- National Institute of Engineering, Mysuru
- National Institute of Malaria Research, Bangalore
- Nirma University, Ahmedabad
- O P Jindal Global University, Sonapat
- Pandit Deendayal Petroleum University, Gandhinagar
- Rajiv Gandhi Centre for Biotechnology, Poojappura
- Robert Bosch Center for Cyber Physical Systems, Bengaluru

- Rural Agency for Social & Technology Advancement (RASTA), Kalpetta
- Safadarjung Hospital, New Delhi
- Shiv Nadar University, Greater Noida
- TERI University, New Delhi
- University of Delhi, New Delhi
- University of Hyderabad, Hyderabad
- University of Kashmir, Srinagar
- VelTech University, Chennai
- Visvesvaraya National Institute of Technology, Nagpur

INTERNATIONAL UNIVERSITY PARTNERS

- Albert Einstein College of Medicine, USA
- Beijing University of Chemical Technology, China
- Fondation Getulio Vargas, Brazil
- Hokkaido University, Japan
- International Central Networks and Partnerships Grant (ICNPG), New Zealand
- International Livestock Research Institute, Kenya
- Tel Aviv University, Israel
- The University of Auckland, New Zealand
- Université Grenoble Alps and CNRS, France
- University College Cork, Ireland
- University of California Berkeley, USA
- University of Canterbury, New Zealand
- University of Leeds, UK

CANADIAN INDUSTRY PARTNERS

- ADA Innovations
- Advanced Theranositics
- Alberta Innovates Bio Solutions
- Alberta Pacific Forest Industries
- Alberta Research Chemicals
- Aquila Diagnostic Systems Inc.
- Atlantis Holdings
- Ballard Power
- BASF
- BI Pure Water
- Brxton LLP
- Butler Brothers Supplies Ltd.
- Canadianpond.ca Products Ltd.
- Canfor
- CAWST
- Centennial Global Solar

- ChipCare Corp
- ChroMedX Ltd.
- Clearflow
- CRH
- DeepRoot
- Delcan
- Delta Remediation
- Droycon Bioconcepts Inc.
- Ducks Unlimited
- Dufferin Concrete, Canada
- Entuitive
- Environmental Power Systems Inc
- Euclid Admixture
- Fiberline Composites Canada Inc.
- Fonderie Horne
- Fyfe Co.
- GE Power Water and Process Technologies
- GE Water, North America
- Glencore Horne smelter
- Globvision Inc
- Greenstone Structural Solution
- Holcim Cement
- Hoskin Scientific
- Hyperion Inc.
- IBM Canada Research & Development Centre
- InnoTech Alberta
- INO (Quebec)
- IntelliRain
- Intelligent Structures
- JPT Peptide Technologies
- Kerr Wood Leidal
- Keystone Labs
- KMT General Contractor Inc.
- Kryton International Inc.
- LA Contracting Ltd.
- Lafarge
- Lehigh Cement
- NAK Design Strategies
- Otter Energy
- Ovivo Filterboxx
- Pawliuk Interplan Design Inc.
- PQ Corporation
- ProMinent Fluid Controls Ltd.
- Pultrall Inc.
- Quake Tek Inc.
- Reed Jones Christoffersen Ltd.
- S-Frame Software Inc.
- Schoeck Canada
- Sensequake Inc
- Sensor Technology Ltd.

- SISCAPA Assay Technologies
- Stantec Inc.
- Stephenson Engineering
- Stream Technologies Inc.
- SUEZ Environemtnal
- TEC Edmonton
- Tricon Concrete Finishing Company
- Trojan Technologies
- Unicel Architectural Corp.
- Vector Corrosion Technologies Ltd.
- Viridis Terra Innovations, Sainte-Marie
- Waterlution
- Xerox Research Centre of Canada (XRCC)

INDIAN INDUSTRY PARTNERS

- ACC Cement
- Ambuja Cements
- Ashtech Private Ltd.
- B.B. Envirotech
- Bains Interlock Tiles
- Basawa Technologies Ltd.
- Bathinda Power Plant
- Bekaert Industries Pvt. Ltd.
- Bholra Nursery
- Brick and Byte Innovative Products Pvt. Ltd.
- Bruker Daltonics Inc
- Cauvery Basin Waterworks
- Cauvery Neeravari Nagama Ltd.
- Cepheid
- Consulting Architect Agnihotry
- Eureka Forbes Ltd.
- FOSROC Chemicals India
- GE Water, India
- GHCL
- GMR Highways
- Golder Associates Consulting Pvt. Ltd.
- Hindustan Safety Glasses
- Hiranandani Group
- Industrial Solid Waste Application Centre
- IT Innovations for Masses
- J+W Consultants LLP
- Jagriti Foundation
- Kheti Virasat
- Lars Enviro Pvt. Ltd.
- Lifecare Innovations Pvt. Ltd.
- Losynth Labs
- M/s Machine Telecon Pvt. Bangalore
- Mahimtura Consultants
- Mehat Car Wash
- Nadeem Akhtar, Arista Networks
- National Instruments Corporation
- Nationwide the Family Doctors
- OnionDev Technologies Private Ltd.
- Ranjeet Bains Interlock Tiles
- Rashtriya Ispat Nigam Ltd. (RINL) [Vizag Steel]
- Reliance Industries
- Robonik India Pvt. Ltd.

- Sandeep Chemicals
- SciGenom Labs
- SenseIndia
- SkillNet Solutions India Pvt Ltd.
- Starmass Environmental Technology
- Stewols India Ltd.
- Tandon Consultancy Services
- Tata Consultancy Services
- Universal Enterprise
- University of Kashmir
- Ushta Infinity
- Yash Industries
- Zenatix
- Zonal Lab

INTERNATIONAL INDUSTRY PARTNERS

- Fiberline Composites A/S, Denmark
- Hydranautics, USA
- Intelligent Structures, USA
- KIK Custom Productions Inc, USA
- Pultron, New Zealand and UAE
- Voltek Energy Inc., USA

CANADIAN GOVERNMENT PARTNERS

- BC Ministry of Forest-Lands and Natural Resource Operations (FLNRO), Powell River
- Canadian Institutes of Health Research, Ottawa
- Environment Canada, Ottawa
- First Nation Health Authority, Vancouver
- Hupacasath First Nation
- Innovation, Science and Economic Development Canada (ISED), Ottawa
- Indigenous Services Canada, Vancouver
- Industry Canada, Federal Government of Canada
- Manitoba Infrastructure and Transportation, Winnipeg
- Ministère des Transports Direction des Quebec
- Ministries of Transportation (Ontario), Ottawa
- Ministry of Transportation and Infrastructure (British Columbia), Victoria
- National Research Council Canada, Ottawa
- Natural Sciences and Engineering Research Council, Ottawa
- Ontario Ministry of Environment, Ottawa
- Public Health Agency of Canada
- Public Health Ontario, Toronto
- Social Sciences and Humanities Research Council, Ottawa
- Southern Ontario Water Consortium, Waterloo

INDIAN GOVERNMENT PARTNERS

- Archaeological Survey of India, New Delhi
- Bureau of Indian Standards, New Delhi

- CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur
- Deltaic Regional Centre, Kakinada
- Department of Biotechnology, Government of India (DBT)
- Department of Science & Technology, Government of India (DST)
- Energy and Petrochemical Department, State of Gujarat, Gandhinagar
- Government of Karnataka, State Highways Development Project, Bangalore
- Grama Panchayathi Thondebavi, Government of Karnataka
- Guru Hargobind Thermal Plant, Bhatinda
- Indian Railways
- Ministry of Health and Family Welfare, New Delhi
- National Health System Resource Center, New Delhi
- NHSRC Ministry of Health and Family, New Delhi
- Punjab Pollution Control Board, Phagwara
- Regional Medical Research Centre for Tribals, Jabalpur
- Rural Water Supply and Sanitation Department, Government of Andhra Pradesh

CANADIAN COMMUNITY PARTNERS

- ?aq'am First Nations Community
- Assembly of First Nations, Ottawa
- Alberta Urban Municipalities Association, Edmonton
- Asia Pacific Foundation of Canada, Vancouver
- Black Mountain Irrigation District, Kelowna
- Canada Foundation for Innovation, Ottawa
- Canada-India Business Council, Toronto
- Canada-India Foundation, Mississauga
- Canada-India Network Society
- Canada-India Parliamentary Friendship Group, Ottawa
- Canada-India Education Society (CIES), Richmond
- Canadian Construction Association
- Canadian Society for Civil Engineering
- Chawathil First Nations Community
- City of Abbotsford JAMES Wastewater Treatment Plant, Abbotsford
- City of Kelowna
- City of Rouyn-Noranda
- Clean Air Partnership, Toronto
- Cree Nation of Wemindji
- District of Lake Country
- District of West Vancouver
- Fort McKay First Nation Community
- Glenmore Ellison Irrigation District, Kelowna
- Hupacasath First Nation
- Leacross Foundation, Chelsea

- Lytton First Nation
- MaRS Innovation, Toronto
- Mitacs-Globalink
- MUHC Foundation, Montreal
- North Okanagan Regional District
- Réseau de recherche en santé des populations du Québec (RRSPQ), Montreal
- Rick Hansen Institute, Vancouver
- St. Joseph's Healthcare, Hamilton
- Tl'azt'en Nation
- Van Anda Improvement District, Powell River
- Village of Thorsby
- Yellowknives First Nations
- Yunesit'in Community

INDIAN COMMUNITY PARTNERS

- Butibori Manufacturers' Association, Nagpur
- Indian Association of Structural Engineers, New Delhi
- Indian Concrete Institute, Chennai
- J&K Wetlands Authority, Srinagar
- Mehat Car Wash Station, Phagwara
- Mumbai Municipal Corp., Mumbai
- Mysuru District
- Nagpur Municipal Corporation
- National Mission for Clean Ganga (NMCG), New Delhi
- Public Health Foundation of India, New Delhi
- Rotary Club Nagpur
- SciGenom Research Foundation, Chennai
- Sengupta Consultancy
- Vidarbha Industries Association, Nagpur
- Village of Poshnia
- World Health Partners

INTERNATIONAL COMMUNITY PARTNERS

- FAO-UNDP, USA
- Gavi, the Vaccine Alliance, Switzerland
- Shamdasani Endowment Grant, China
- Water Magic, Norway
- Wells for India, UK



Vancouver, Canada



Shimla, India



For more information, please visit:

WWW.IC-IMPACTS.COM



Réseaux de centres
d'excellence du Canada



Networks of Centres
of Excellence of Canada